REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended an in light of the following discussion is respectfully requested.

Claims 4-6 and 10-17 are pending in the present application. Claims 1-3 and 7-9 have been canceled, Claims 4 and 10 have been amended and Claims 14-17 have been added by the present amendment.

In the outstanding Office Action mailed October 8, 2003, the reply filed on July 14, 2003, was held non-responsive because it was indicated the newly added claims read on a non-elected species. In light of this indication, the present amendment does not add new Claims 18-24. However, new Claims 14-17 have still been added and are dependent claims depending either directly or indirectly on Claim 4. Further, it is respectfully noted the features recited in these claims are also shown in the elected Figure 4. In addition, it is respectfully noted that the measuring section discussed in amended Figure 4 is described in the specification at least at page 21, line 3 of the specification with regard to Figure 4. In particular, this description indicates that the measuring section shown in Figure 4 comprises the pulse power supply 14, the dummy probe 18, the filter 22 and the synchroscope 20. Accordingly, in light of the above comments, it is respectfully submitted the independent claims read on the elected species of Figure 4.

In the outstanding Office Action mailed March 13, 2003, Claims 4 and 5 were rejected under 35 U.S.C. § 102(b) as anticipated by Shindo. Accordingly, arguments will now be presented in response to this Office Action.

Applicants respectfully first note that Claims 10-13 were added in a preliminary amendment filed on March 13, 2003, which do not appear to have been considered as the Office Action was mailed on the same day.

Claims 4 and 5 stand rejected under 35 U.S.C. § 102(b) as anticipated by Shindo. This rejection is respectfully traversed.

Amended Claim 4 is directed to a measuring apparatus for measuring an electron energy distribution in a plasma region generated by a high frequency power. The measuring apparatus includes a heating probe having a probe portion which is inserted into the plasma region to be heated by application of a pulse voltage, a pulse power supply which applies heating pulses to the heating probe to heat the probe portion to a state that the probe portion can emit thermions, and a measuring section which detects a difference in floating voltage between a voltage (H level) and a no-voltage (L level) of the pulse voltage. Also included is a calculating section which obtains an electron energy distribution in the plasma region on the basis of the detected value detected by the measuring section. Further, the pulse power supply varies a pulse height (H level) of the pulse when applying the pulse voltage to the heating probe.

In a non-limiting example, Figure 8 illustrates a heating probe 4 having a probe portion which is inserted in the plasma region P to be heated by application of a pulse voltage, a pulse power supply 14 which applies heating pulses to the heating probe to heat the probe portion to a state that the probe can emit thermions, a measuring section 40 which detects a difference in floating voltage between a voltage (H level) and a no-voltage (L level) of the pulse voltage, and a calculating section 24 which obtains an electron energy distribution in the plasma region on the basis of the detected value detected by the measuring section. Further, the pulse power supply 14 varies a pulse height (H level) of the pulse when applying the pulse voltage to the heating probe 4 (see page 12, lines 18-22 and page 20, lines 4-10).

Thus, the present invention is directed to a measuring apparatus which measures an electronic energy distribution in a plasma region generated by a high frequency power in

which the pulse power supply varies a pulse height of a pulse voltage applied to the heating probe. Thus, an accurate electron energy distribution and high frequency plasma can therefore be obtained (see page 20, lines 4-10).

The outstanding Office Action indicates Shindo teaches the claimed invention. Applicants respectfully note that Mr. Haruo Shindo is a co-inventor of the present invention. Further, Shindo discloses a technique using a plasma electron temperature measuring method, whereas the present invention as discussed above relates to a technique using electron energy distribution. As noted in the specification at page 2, lines 5-11, the method for measuring the plasma electron temperature is a commonly-used method. (See page 2, lines 5-11). Further, as noted in the specification, the temperature measuring method has a problem in that it can only measure the electron temperature corresponding to the average energy and maximal distribution, and the method cannot measure the electron energy distribution.

On the contrary, according to the present invention, when the electron energy distribution is measured, the pulse height (H level) of the pulse voltage VPP is changed to various levels to obtain measurement results as described in the specification at page 12, lines 18-22. Shindo do not teach or suggest these features. Accordingly, it is respectfully submitted independent Claim 4 and each of the claims depending therefrom are allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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